hardware cost, perhaps only a resistor and a double throw switch. Of further note is the fact that this ADC can be incorporated within the PMU **130** and does not need to be provided as an external (to the PMU) element.

[0093] Disadvantages can also be experienced by one or more of the example embodiments. In particular, the voltage available at VBAT is lower than a case where VBAT is connected directly to the anode of the battery. In the case of a 0.15 Ohm resistor, the voltage drop across the second resistor **108** is 300 mV for a 2 A drain. This reduction in voltage overhead can be a significant disadvantage in some situations. This arrangement also provides power loss through the resistor **108**. This is disadvantageous in that it is a waste of charge stored in the battery **104**, reducing charging intervals and reducing the life span of the battery. It also provides some heating, for which heatsink provision needs to be made in the design of the device **101**. These disadvantages can be ameliorated by providing the second resistor **108** with a smaller value. The use of a smaller value resistor reduces the accuracy of measurement of current draw at low currents, so ultimately the choice of value for the resistor is a trade-off between a requirement for accuracy and efficiency of utilisation of battery charge.

[0094] The resistors **114**, **108** can be termed resistive elements and may take any suitable form. For instance they may be metal plate or thick film ceramic resistors. They may be surface mount devices. They may have tolerance to high temperatures. They may have low temperature coefficients, so that their resistance does not alter significantly with changes in temperature. They may be high precision resistors in that their resistance is within a very narrow range.

[0095] The passing element **118** may be any suitable element. For instance, it may be any suitable type of controllable switch, such as a bipolar transistor or FET. The passing element may be on-off in the sense that it may allow or block current. Alternatively, it may be controllable so as to limit current to a non-zero value that is less that the maximum possible current. In some exemplary embodiments, the passing element **118** may be omitted.

[0096] The switch **144** may take any suitable form. It is typically implemented as a transistor switching circuit.

[0097] The MCU may be any suitable microcontroller. The MCU may have the memory **140** integrated therein. The MCU may alternatively be replaced with a processor having more processing capability than would normally be found with a standard MCU.

1-15. (canceled)

16. An apparatus comprising:

a charging terminal for connection to a source of charging current;

a battery terminal for connection to a battery;

a first resistive element;

a second resistive element;

a switch having a single pole and first and second throws; and

a voltage measurement circuit having first and second inputs,

wherein:

the first throw of the switch is coupled to a node between the battery terminal and the second resistive element,

the second throw of the switch is coupled to a node between the charging terminal and the first resistive element,

the first resistive element is coupled between the charging terminal and the second resistive element,

the second resistive element is coupled between the battery terminal and the first resistive element,

the pole of the switch is coupled to a first input of the voltage measurement circuit,

the second input of the voltage measurement circuit is coupled to a node between the first and second resistive elements, and

the voltage measurement circuit is configured to measure a voltage across its first and second inputs.

17. The apparatus as claimed in claim **16**, wherein the switch comprises a control input and is configured to connect the pole and the second throw together when a charging voltage is present at the charging terminal.

18. The apparatus as claimed in claim **17**, wherein the control input of the switch is coupled to a mid-point of a voltage divider that is coupled between the charging terminal and ground potential.

19. The apparatus as claimed in claim **17**, wherein the control input of the switch is coupled to a controller that is configured to provide a control signal depending on whether charging is or is not required.

20. The apparatus as claimed in claim **16**, further comprising a passing element coupled between the charging terminal and the first resistive element.

21. The apparatus as claimed in claim **16**, wherein the voltage measurement circuit comprises a comparator, for example a differential amplifier, having first and second inputs.

22. The apparatus as claimed in claim **21**, wherein an output of the comparator is coupled to an input of an analogue to digital converter.

23. The apparatus as claimed in claim **16**, wherein the voltage measurement circuit forms part of a power management unit.

24. The apparatus as claimed in claim **16**, further comprising a converter configured to calculate current from signals provided by the voltage measurement circuit.

25. The apparatus as claimed in claim **16**, further comprising an integrator configured to integrate measured voltage or calculated current.

26. The apparatus as claimed in claim **25**, comprising a battery level calculation module configured to use the integrated voltage or current to calculate remaining capacity of a battery coupled to the battery terminal.

27. A method of operating apparatus comprising:

a charging terminal for connection to a source of charging current;

a battery terminal for connection to a battery;

a first resistive element;

a second resistive element;

a switch having a single pole and first and second throws; and

a voltage measurement circuit having first and second inputs,

wherein:

the first throw of the switch is coupled to a node between the battery terminal and the second resistive element,

the second throw of the switch is coupled to a node between the charging terminal and the first resistive element,

the first resistive element is coupled between the charging terminal and the second resistive element,

the second resistive element is coupled between the battery terminal and the first resistive element,